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ODP # C-448

1 APR 1980

MEMORANDUM FOR: Director of Logistics
Deputy Director for Administration

VIA: Inspector General

FROM: [redacted] 25X1A
Chief, Audit Staff

SUBJECT: Report of Audit Appraisal, Inventory Control System

1. Attached is the subject report for your information.

2. This report covers three areas of interest: the current Inventory Control System (ICS), the Federal Automated Requisitioning system (FAR), and the Office of Logistics staff studies which focused on the replacement of ICS.

3. Please advise me of action taken on the recommendations contained in the report.

4. We wish to express our appreciation for the cooperation and assistance provided by the Supply Division management and staff during the audit.

[redacted] 25X1A

Attachment:
As stated

Distribution:
Orig. - D/OL
1 - DDA
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REPORT OF AUDIT APPRAISAL

OFFICE OF LOGISTICS
INVENTORY CONTROL SYSTEM
and
FEDERAL AUTOMATED REQUISITIONING SYSTEM

31 December 1979

Background

1. The Inventory Control System (ICS) is a computer application designed to enable the Office of Logistics (OL) to automate the management and control of Agency stock property assets (both nonexpendable and expendable). ICS, through the Generalized Information Management (GIM) System II, provides an online capability that can perform many of the clerical functions required in daily operations of Supply Division (SD). The system responds to requisitions from customers worldwide and provides management with inventory control information that would otherwise be difficult to obtain.

2. The ICS replaced the Stock Accounting System as the primary tool used by SD to manage and control inventory assets. The transition from SAS to ICS was accomplished in a series of phases, beginning in August 1973, and was completed in June 1975. The ICS is made up of 15 files and contains over 288,800 online and 385,200 offline records. In Fiscal Year 1979, ICS processed 17,000 requisitions totaling over 51,000 line items. Hardware usage, software development and maintenance performed by the Office of Data Processing (ODP) in support of ICS consumed $800,000 in FY 1979 resource dollars per ODP's Project Activity Report.

3. The Federal Automated Requisitioning (FAR) system will be a fully automated minicomputer-supported system to process, via direct electronic link, Agency procurement requisitions with 47 military and Federal inventory control points. The system is scheduled for implementation mid-1980 and will replace the present Interim Federal Automated Requisitioning (IFAR) system. IFAR is a semi-automated system wherein the data base resides on punch cards. At this time, pertinent requisitioning status can only be

obtained by manually decoding a punched card. The primary benefits to be gained from the improved FAR system are: enhanced input; elimination of punched cards; direct two-way communication with the 47 inventory control points; and the capability to process procurement status information and maintain automated suspense and history files.

4. The Office of Logistics has sponsored a study, called the Logistics Materiel Management System (LMMS), to determine the feasibility of developing a replacement system for ICS. The decision to commence such a study is the culmination of several internal OL reviews recognizing the need for improved support to worldwide supply functions.

Scope of Audit

25X1A 5. The audit appraisal was conducted under the authority of [redacted] and concentrated on:

- reviewing the effectiveness of the current Inventory Control System in meeting Office of Logistics requirements (comments begin with paragraph 10),

- examining Supply Division's modifications and the utilization of the Federal Automated Requisitioning system (comments begin with paragraph 23), and

- reviewing the requirements for the future replacement of ICS (comments begin with paragraph 25).

6. The computer hardware used to support ICS was reviewed separately during the ODP audit and was therefore omitted from this review. The minicomputer system to be used by the FAR system was reviewed as a part of the audit.

Summary

7. ICS is a computerized system superimposed on a manual supply processing system. The original intent of ICS was to reduce the amount of clerical work and paper dependency associated with the supply function. Some potential key users within SD are not, however, familiar

with nor aware of the capabilities and potential of ICS. This lack of knowledge and consequent nonreliance on the ICS have resulted in manual record keeping and duplication of records in the management of stock inventories. An ICS training manual has recently been prepared and, in conjunction with training efforts undertaken by SD and the recent reassignment of a member of the Data Control Branch (DCB) to the Central Depot (CD), will no doubt help to correct this situation.

8. The installation of a minicomputer-based FAR information system could provide major requisition processing benefits on orders placed through Federal supply centers. The design documentation for the FAR system was incomplete at the time of audit. Without the needed documentation it was not possible to accurately assess the quality of the system.

9. Several OL studies have indicated that ICS is not capable of providing adequate support to a worldwide supply function. The Director of Logistics has therefore approved the formation of a task force to study the feasibility of developing an ADP system to support worldwide OL operations. The results of the present audit also indicate the need for a more flexible and current supply management system. However, in light of the projected three year lead time to complete the feasibility study and develop the LMMS, some short term solutions for today's ICS problems would appear to be desirable.

Detailed Comments

Effectiveness of the Current ICS System

10. A major purpose of the audit was to analyze the effectiveness of the current system. ICS was originally designed to assist the Office of Logistics in stock inventory control. Enhancements, past and present, have attempted to convert ICS to a supply management system. New enhancements to the system are difficult to design and awkward to implement due to the limited technical data processing resources available and inadequate system documentation. ICS record formats are also difficult to change and sometimes result in an undesirable effect on menus and processes.

Improvements to the Current System

11. Document Control Branch prepared a paper in August 1979 reflecting desired ICS enhancements. In this phase of ICS's life cycle, some of these requirements may no longer be cost effective. The identification of essential enhancements, accompanied with detailed specifications needed for near-term implementation, would provide SD with an optimal payback of resources expended.

12. The limited computer programming resources of System Analysis Branch/Executive Officer/OL are assigned by priority. ICS has a low priority and SAB is reluctant to expend limited resources on a system that may be scheduled for replacement. However, a new supply management system may take several years to implement. Alternatively, the Office of Logistics could gain increased effectiveness until a replacement system is operational by implementing several near-term enhancements.

RECOMMENDATION #1: Explore the benefits that may be derived from system enhancements for the following and if beneficial implement the changes required:

a. develop a random inventory selection module to replace an inefficient card selection process,
b. modify data elements to provide the information needed to determine repetitive demand, and
c. produce needed statistical information automatically at appropriate periods and on demand.

Reporting Improvements

13. Key users of ICS are not aware of the full capabilities of the system. Some potential key users have been reluctant to use the system and to define what capabilities ICS should support. The audit surfaced questions about the use of ICS in several cases. Supply Management Branch, for example, has received basically the same ICS reports with the same contents since the inception of ICS (1975). There is serious doubt about the need for many of these reports.

14. Many of the 41 ICS reports, prepared in approximately 130 copies ranging from 8 to 2,100 pages,

could be improved to assist SMB in managing stock inventory. Some reports are too lengthy and all-encompassing for use as a logical and practical review process. For example, the stock status report can be obtained online when the need arises. In response to our survey on the usage of ICS reports, "reference" was the primary purpose indicated. The computer terminal can be utilized for this type of information by compiling inventory data based on specific queries. Microfiched copies of lengthy reference reports would reduce storage requirements and possibly be more efficient. A complete re-examination of the end of the month reports is needed to determine their usefulness.

RECOMMENDATION #2: Re-examine the month end reporting requirements to determine minimum reports need.

15. To gain optimal utilization of on-line queries from ICS, additional SMB team members will need training in using the GIM II language. The ICS Training Manual, being finalized by Data Control Branch, will be a positive step in improving the use of ICS. Supply Division's willingness to allocate resources to its training efforts will result in better utilization of ICS, especially in the expanded use of on-line queries.

Improvements to the Depot Issue Notice

16. The current use of the Depot Issue Notice (DIN) at the Central Depot needs to be reviewed and further modified. The DIN is a materiel report and movement document created as a result of the original ICS design. The DIN has not, however, been used to its full potential. The CD/Data Control Unit (DCU) reviews each DIN and verifies it to the source, requisition Form 88. CD's objective is to determine if an error exists on the DIN. Two DCU employees are tasked with this responsibility. It takes approximately one minute to review each DIN. Last quarter 11,332 line items were reviewed, consuming 188 hours or 23.5 days or 4.7 weeks. The rate of errors found is not kept by DCU. Formal verification of the requisition data at the point of input by SMB's input specialists would eliminate the need for CD to verify the data on the DIN. The input specialist could, for example, reverify critical fields to ensure data entry accuracy.

17. If the DIN were redesigned to include the consignee, remarks, shipping and packing information, it could replace the Form 88 as the materiel movement document at the Depot. The redesigned DIN could also include preprinted areas to capture warehouse refusal and report of inventory adjustment information. The result would be an all-purpose document accommodating the complete CD process for managing inventories. During the audit the DIN was modified in accordance with these suggestions and is now being used as the sole document for local requests. If this effort succeeds, the overseas requisitions can be processed the same way.

RECOMMENDATION #3: Assess the utility and cost effectiveness of continuing to compare the Depot Issue Notice to the requisition Form 88 and take appropriate action.

Manual and Duplication of Effort

18. There are several indications of duplication of data that creates unnecessary work. For example:

a. DCU's vendor file contains the same information as the Document Control Number file,
b. vendors' shipping/packing slips are recopied by CD on a receiving report,
c. SMB manually records the DCN and Materiel Procurement Authority (MPA) transaction on stock replenishments.

By querying ICS with the Procurement Instrument Number, the DCN could be identified and the DCN file used in lieu of vendor name file. It appears that the vendor's packing slip, once verified by the receiving officer, could be used as the receiving report in lieu of the current practice of preparing a separate receiving report. The DCN and MPA data are currently available on an ICS report. A review to eliminate unnecessary duplication of files and documents seems appropriate.

19. Many of the manual logs and statistical tallies kept in CD could be replaced by ICS queries. These logs and tallies are used primarily for production work measurements. During the audit we were able to use ICS to duplicate some of these manually compiled figures. With DCB taking a more

active role in identifying potential uses of the current ICS capabilities, many of these manual logs and tallies could be eliminated.

RECOMMENDATION #4: Consolidate files and manual procedures to eliminate duplication of data and recording processes.

Improvements to Property Turn-in Procedures

20. The procedure for recording property turn-in (PTI) needs to be reviewed. The Form 1707, "Headquarters Property Turn-in," or the Form 1330, "All Purpose Property Transactions," is received along with the item in the Central Depot. CD notifies SMB as to the receipt of the materiel and forwards appropriate forms to SMB. SMB reviews the documentation and indicates the proper action for each item on the form. Still intact, the forms are returned to CD for action: "returned to stock" or "test and inspection" or "disposal." These forms are again sent back to SMB, where the data pertaining to the CD action is entered into ICS. The original forms are finally returned to CD for filing. A more efficient procedure minimizing the paper handling and keeping the data entry at CD would streamline the PTI process.

RECOMMENDATION #5: Revise Property Turn-In procedures to minimize paper handling and processing.

Wash Stock Numbering Procedure

21. Supply Division's use of "wash" stock numbers needs to be revised. A "wash" stock number is an artificial stock number used in ICS for two purposes. The first is to bypass the system's valid stock number check and the second is to avoid the need to research a possible stock number for items that are expected to have little demand. The use of "wash" stock numbers prohibits the use of ICS to capture repetitive demand information on those items coded with artificial numbers. Data on this type of activity is needed to establish demand levels and to identify those items that should be stocked rather than procured on an on-call basis. Perhaps using a programmed flag to permit the stock number

to bypass the valid stock number edit check would provide a more useful method for identifying items currently not carried in the Valid Stock Number file. The flagged stock number could then be carried forward to the suspense file and finally to the activity file where a query could be made by stock number to determine level of demand. If the demand level is high enough this stock number could then be added to the stock number file. If a procedure similar to the one stated were implemented, the level of demand for all items could be established and quantitative data would be available to determine the best method of acquisition.

RECOMMENDATION #6: Consider modifying the current "wash" stock number procedure to provide the needed level of demand information.

Telecopier Usage

22. The telecopier link between SMB and CD is not being utilized effectively. The telecopier was implemented for priority requisition processing. The requesting office simply writes on the requisition "flash processing" and it is sent, without review, to CD via the telecopier. The requisition is first xeroxed because the current telecopier has a tendency to "chew up" the requisition. The copy is then placed in the copier for a six minute transmission. A sampling of flash requisitions indicated that the procedure was being used to request forms, miscellaneous supplies, and xerox paper. Rental of the two copiers costs approximately $3,100 per year. Proper utilization of the Depot Issue Notice could replace this process. Printing out the DINs automatically on flash requests would accomplish the same results with an annual savings of at least $3,100.

RECOMMENDATION #7: Investigate the possibility of utilizing the DIN as a replacement for the telecopier in the processing of priority requests.

Federal Automated Requisitioning System

23. The Federal Automated Requisitioning system will be used by the Interdepartmental Support Branch (IDSB) to directly communicate and monitor orders from Federal and military supply centers. The new system, whose implementation is to begin by mid-1980, will operate with the support of a Data General C3/40 Model C6 minicomputer. The hardware and software costs for the minicomputer total

approximately $170,000. The minicomputer will transmit procurement actions via the Defense Automated Addressing System networking to government supply centers. There are also plans to interface the FAR system with the future replacement to the Inventory Control System. Some benefits of the new FAR system are reduced processing time for requisitions, online status of pending requests, and the elimination of hard copy files.

24. The design and documentation of the FAR system are still incomplete. A complete documentation package is essential during the programming and implementation of the new system. A schedule has subsequently been established by SAB to complete the documentation. The following items are needed to ensure that the design and development of the FAR system has been fully documented by Systems Analysis Branch:

a. implementation plan,
b. backup, recovery and restoration plan,
c. program manuals,
d. operators' and users' manuals,
e. ICS interface plan, and
f. GAS interface plan.

The need for complete system documentation in this case is imperative in view of the impending reassignment of the systems analyst, who is also the programmer, for the FAR system.

ICS Replacement: Logistics Materiel Management System

25. Several Office of Logistics internal reviews have been completed which conclude ICS should be replaced. Our audit considered and generally agreed with the "Review of Logistics Materiel Management System" study.

26. The LMMS study is a review of the daily operational problems encountered in the ICS environment. However, there are several critical areas that were not addressed, primarily because of a time constraint. The study did not define future goals of ICS, nor did it concentrate a significant amount of resources on the Central Depot processes. An examination of alternate supply management systems readily available from software firms was also omitted.

27. The LMMS study's conclusions and recommendations indicated that OL management should select one of the following options:

a. keep the present system with various enhancements;
b. reprogram OL's automated systems using current GIM II capabilities; or
c. replace ICS in its entirety.

28. The current ICS is not able to produce supply management reports that can provide users with data identifying the extent of repetitive demand, vendor delivery schedules and trends. Statistical information on items such as discounts, quality, sterility, performance, alternate sources, item status, and analysis of in-process are also not available. An in-depth analysis of the current ICS and its shortcomings would provide a solid foundation to build the new LMMS and would also result in a high degree of end user involvement in the data gathering phases. The resultant pay back would be end user acceptance of a system they had helped to build rather than one that had been thrust upon them.

29. There are thus several things which the LMMS task force should concentrate on during design and development of the new supply system:

a. coordinate plans for user involvement,
b. review the need for the proliferation of numbering schemes,
c. reduce paper dependence,
d. design multi-use documents,
e. develop user-oriented instructions,
f. allow for interfacing with other automated systems,
g. prepare a comprehensive user training plan,
h. format menus to resemble hardcopy source documents, and
i. develop a priority requisition processing system.

30. Should the decision be made to develop the LMMS, the Agency could gain considerably from a centralized property management system that is targeted toward long range Agency goals and objectives. Building on current methodologies, coupled with an investigation of property management systems that may be presently available in either the private or Federal sector, could produce a viable operational system in a relatively short time at an affordable cost.